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ABSTRACT

The purpose of the AIM/ARM project (Abstracts of Instructional Materials in Vocational and Technical Education/Abstracts of Research Materials in Vccational Education) was to achieve effective use of research reports, prcgram descriptions, and instructional materials by researchers. To this end, the project announced 3,600 reports and 1,189 prcjects in the bimonthly publications, AIM/ARM and "Resources in Vccaticral Education" (RIVE), during the three-year ccntract period. It produced seven instructional materials catalogs, eighteen tcpical bibliographies, fourteen unpublished interpretative papers, three integrative analyses, and six special publicaticns. Project staff made twenty presentations to national and regicnal meetings, collaborated with fourteen agencies and organizaticns, and conducted 106 literature searches. Major emphasis was given to improving the quality of input to information systems, helping users improve project design and education programs by usirg informaticn, and redesigning the bimonthly publication. The project's focus on data base building, knowledge transformation, and information services will be continued by the National Center for Research in Vocational Education. (Author/EM)

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ED159392

# ABSTRACTS OF INSTRUCTIONAL AND RESEARCH MATERIALS IN VOCATIONAL AND TECHNICAL EDUCATION

FINAL REPORT

Prepared by
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U S DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
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July 1978

CE 017 456

Final Report
Contract No. 300-75-0141
A Research Project in Vocational
Education conducted under Part C
of Public Law 90-576

The project reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors or grantees undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

## ABSTRACT

The purpose of the AIM/ARM Project was to achieve effective use of research reports, program descriptions, and instructional materials by researchers, developers, and practitioners to improve vocational and technical education. To this end, the project announced 3,600 reports and 1,189 projects in the bimonthly publications, AIM/ARM and Resources in Vocational Education, during the three-year contract period. It produced seven instructional materials catalogs, 18 topical bibliographies, 14 unpublished interpretative papers, three integrative analyses, and six special publications. Project staff made 20 presentations to national and regional meetings, collaborated with 14 agencies and organizations, and conducted 106 literature searches. Major emphasis was given to improving the quality of input to information systems, helping users improve project design and education programs by using information, and redesigning the bimonthly publication. The project's focus on data base building, knowledge transformation, and information services will be continued by The National Center for Research in Vocational Education.

## FOREWORD

This report concludes over ten years of work on one aspect of the effort to build a comprehensive data base, transform knowledge into useful forms, and provide information services for the improvement of vocational education. This work will be continued as functions of The National Center for Research in Vocational Education at The Ohio State University. Some of the accomplishments of the AIM/ARM Project have been innovative and exemplary during a period when all of education was endeavoring to build an information dissemination capacity. The three-year contract period reported herein represents a period of growth and refinement made possible by earlier pioneering efforts and by concurrent developments in the field.

Special recognition is accorded the project director, Joel H. Magisos, who has been involved in many of the concurrent developments as well. Recognition also is given to Wesley E. Budke, Carol P. Kowle, and Allen B. Moore, specialists; Ann E. Stakelon, Kathleen A. Jezierski, and Ruth Gordon, program associates, and a number of other personnel who served on the project at various times. The National Center also appreciates the external consultants who served as authors, compilers, reviewers, and panelists.

The project staff dedicate this report to Mr. Lawrence Braaten, Chief of the Demonstration Branch in USOE's Bureau of Occupational and Adult Education. He served as project officer during this contract period and provided insightful leadership to the AIM/ARM Project during many critical periods of the project's ten-year history.

Robert E. Taylor, Executive Director
National Center for Research in
Vocational Education

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# INTRODUCTION

Abstracts of Instructional Materials in Vocational and Technical Education (AIM) and Abstracts of Research Materials in Vocational Education (ARM) were initiated by The Center for Vocational Education (CVE) at The Ohio State University (OSU) in 1967. AIM and ARM, as compatible supplements to ERIC's Resources in Education (RIE), were needed to provide more comprehensive coverage of the burgeoning literature in vocational and technical education, especially of the instructional materials for which originally there were no provisions in ERIC.

During its first seven years, AIM and ARM experienced a precarious funding climate as general responsibility for information dissemination in education shifted from agency to agency. In 1975, The Center for Vocational Education had the opportunity to bid in open competition for a contract which finally gave the AIM/ARM Project stability and credibility. "AIM/ARM: Abstracts of Instructional and Research Materials in Vocational and Technical Education" was developed in response to RFP 75-8 and resulted in Contract No. 300-75-0141.

During the contract and its two one-year extensions, the basic AIM/ARM publication was replaced by Resources in Vocational Education, a newly-formated bimonthly publication which will be continued by the National Center for Research in Vocational Education. During the 1975-78 contract period, 3,600 instruction and research materials and 1,189 projects in progress were made accessible to the field by announcement in AIM/ARM (Vol. 8, No. 2-6 and Vol. 9) and Resources in Vocational Education (Vol. 10 and Vol. 11, No. 1). The

output of the AIM/ARM project included:

a. 18 issues of AIM/ARM or Resources in Vocational Education and three annual indexes

b. 11 AIM/ARM microfiche sets in the ERIC collection.

c. Computer search tapes provided to 11 instructional users.

d. 106 computer searches for the sponsor.

e. 19 published bibliographies, 14 of which were in support of USOE solicitations for grant applications.

f. 7 compilations of instructional materials for occupational service areas which had been announced in AIM/ARM (1972-1975).

g. 16 interpretative papers for the sponsor.

h. Three integrative analyses of earlier work conducted under USOE contracts or grants.

i. Two compilations of current projects funded by USOE's Division of Research and Demonstration (FY75 and FY76).

Less tangible results included continuing assistance to the state research coordinating units and other agencies engaged in research, development, dissemination, or other vocational education program improvement activities. For example, the project staff provided testimony, assistance, and general support to the Committee on Vocational Education Research and Development (COVERD), a body convened by the National Academy of Sciences under a USOE contract.

The following background information is provided as context for the project accomplishments during the three year period reported in a subsequent section.

## Background of AIM/ARM

Several developments occurred during the 1967-1974 period which shaped the AIM/ARM project, its products, and its potential.

The most significant developments were:

1. Computerization of the data input and camera-ready output phases of AIM/ARM production. These were documented in two reports.[1,2]
2. Development of computer tapes for use in searching the AIM/ARM file.
3. Partitioning of the 1967-1971 AIM file into separate publications for use in seven occupational areas.[3-9]

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[1] Magisos, Joel H., and Berkebile, Lonnie A. Computer Applications to ERIC Clearinghouse Document Collections: A Final Report, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), March, 1971.

[2] Berkebile, Lonnie A. Computer Applications to ERIC Clearinghouse Document Collections: A User and Installation Handbook, (Columbus, OH: The Centerfor Vocational and Technical Education, The Ohio State University), March, 1971.

[3] Agricultural Education Instructional Materials from AIM, 1967-1971, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1972, Bibliography Series No. 8.

[4] Business and Office Education from AIM, 1967-1971, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1972, Bibliography Series No. 9.

[5] Distributive Education from AIM, 1967-1971, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1972, Bibliography Series No. 10.

[6] Health Occupations Education from AIM, 1967-1971, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), Bibliography Series No. 11.

[7] Home Economics Education from AIM, 1967-1971, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1972, Bibliography Series No. 12.

[8] Industrial Arts Education from AIM, 1967-1971, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1972, Bibliography Series No. 13.

[9] Trade and Industrial Education from AIM, 1967-1971, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State Univeristy), 1972, Bibliography Series No. 14.

4. Addition of a "Research Projects in Progress" section in which to report state-administered Part C and D proposals.[10]

5. Combination of the separate quarterly AIM and ARM publications into a single, bi-monthly publication (AIM/ARM).[11]

6. Addition of a "Curriculum Development in Progress" section.[12]

These developments in the AIM/ARM system and products were paralleled by efforts, combining the resources of The Center for Vocational Education and its affiliated ERIC Clearinghouse, to develop a linked network for information dissemination. These efforts included:

1. Development of guidelines for information dissemination systems for vocational-technical education, in cooperation with an ad hoc committee of research coordinating unit personnel.[13]

2. A two-year pilot program for development of an information dissemination system for vocational-technical education involving eight state RCU's (i.e., California, Nevada, New Jersey, New York, Oklahoma, Pennsylvania, Tennessee, and Wisconsin), some of which developed the leading information dissemination programs in the Nation.

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[10] Abstracts of Research and Related Materials in Vocational and Technical Education, Summer, 1971, (Columbus, OH: ERIC Clearinghouse for Vocational and Technical Education, The Center for Vocational and Technical Education, The Ohio State University), 1971.

[11] Abstracts of Instructional and Research Materials in Vocational and Technical Education, AIM/ARM, Vol. 7, No. 1 (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1974.

[12] Abstracts of Instructional and Research Materials in Vocational and Technical Education, AIM/ARM, Vol. 7, No. 2, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1974.

[13] Taylor, Celianna I. and Magisos, Joel H., Guide to State Vocational-Technical Information Dissemination Systems, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1971.

3. A study of 3,200 potential users of the system, in cooperation with the pilot RCU's.[14]

4. Training workshops (Columbus and Denver) for information specialists from 26 state RCU's.

5. Development of a guide to information resources in the states.[15]

The effectiveness of the RCU-based information dissemination system is well known and documented in the literature. More recently, the Curriculum Development Branch of USOE/BOAE/DRD developed a national network for curriculum coordination in vocational and technical education. The Center for Vocational Education participated in early network meetings and worked with curriculum coordination center directors in assessing needs that could be met by AIM/ARM.

In addition to major developments in the AIM/ARM system and efforts to link an information dissemination network, several product potentials were realized by related projects. For example, the USOE-sponsored school-based career education model developed bibliographies for each of 15 occupational clusters. Over 100 information analysis papers were developed by the USOE and NIE-sponsored ERIC Clearinghouse on Vocational and Technical Education. Both of these efforts drew upon literature made accessible by the AIM, ARM, and AIM/ARM publications.

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[14] Magisos, Joel H., Interpretation of Target Audience Needs in the Design of Information Dissemination Systems for Vocational-Technical Education (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1971.

[15] Miller, David H. Guide to State Information Resources, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1972.

Over 9,144 research and related materials and 6,252 instructional materials were announced in AIM and ARM between 1967 and 1974. Late in this period, bibliographies were developed at USOE/BOAE/DRD request to assist applicants for research support under Part C of P.L. 90-576 in five priority areas for FY75.[16-20]

## Need for an Information System for Vocational Education

The extent of the literature resulting from vocational education research and curriculum development is considerable. Most of these materials were "fugitive" in nature prior to 1967; that is, they were issued in limited quantities and were not systematically cataloged and made available for widespread and continuing use. Many of the materials resulting from USOE/BOAE-funded projects, did not meet ERIC selection criteria during the earlier period.

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[16] Magisos, Joel H. and Schroeder, Paul E., Compilers, State Administration of Vocational Education: Information Sources, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1974.

[17] Magisos, Joel H., Local Administration of Vocational Education: Information Sources, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1974.

[18] Magisos, Joel H., Educational Personnel for the Disadvantaged, Handicapped, and Minorities: Information Sources, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1974.

[19] Magisos, Joel H., Guidance, Counseling, Placement and Follow-Through Systems: Information Sources, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1974.

[20] Magisos, Joel H., Curriculum, Demonstration, and Installation Studies: Information Sources, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1974.

These materials could not be used effectively if not accessible and available to educational practitioners (i.e., administrators, teacher educators, counselors, and teachers) and to researchers and curriculum developers.

The practitioners needed the information for policy decisions and program development. The researchers and developers needed information about completed and on-going work to avoid duplication and to benefit by existent knowledge.

The information needs of these groups were systematically studied by The Center for Vocational Education and reported in three publications.[21-23] These information needs also were expressed in letters of support for AIM/ARM during one of its funding crises (1970).

The need has been for collection and processing of materials into a system which makes the materials accessible and available to potential users on a continuing, stable basis. The collection had to be searchable by users with different levels of sophistication and resources.

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[21] Magisos, Joel H., Interpretation of Target Audience Needs in the Design of Information Dissemination Systems for Vocational-Technical Education (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1971.

[22] McCracken, J. David, Information Needs of State Directors of Vocational Education. (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), March, 1973. Research and Development Series No. 83.

[23] McCracken, J. David, and Gillespie, Wilma B. Information Needs of Local Administrators of Vocational Education (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), March, 1973. Research and Development Series No. 84.

The primary users who have needed the system have been state vocational education directors, research coordinating unit directors, and local vocational education directors. Other important groups with information needs were graduate students, inservice training participants, curriculum committee members, practicing teachers, state and local advisory committee members, and various professional organization staff members. The system was needed by various agencies of the Federal government, principally the USOE Bureau of Occupational and Adult Education.

## Information Collection, Processing and Dissemination in Vocational Education

Information collection, processing, and dissemination in vocational and technical education has been conducted principally by the AIM/ARM project, The Center for Vocational and Technical Education, the former ERIC Clearinghouse on Vocational and Technical Education, the present ERIC Clearinghouse on Career Education, the state research coordinating units and associated information programs (e.g., VEIN in Pennsylvania), and curriculum coordination centers. The current status of these activities and the involvement of key actors are described.

### Information Collection

The AIM/ARM Project has been receiving Part C, D, and I project reports and products from USOE/BOAE/DRD for possible inclusion. In addition, materials were received unsolicited from the field. Instructional materials have been sought, principally from curriculum coordination centers, instructional materials laboratories, and other sources. A joint agreement with the ERIC Clearinghouse in Career Education at Northern Illinois University was

operative for a short period to facilitate solicitation of materials for the Clearinghouse from the field and to ensure the field of announcement in the appropriate vehicle (i.e., AIM/ARM or RIE).

Processing

Selected items have been cited, abstracted, indexed, and input in a routine processing procedure. Indexing terms have been selected from the Thesaurus of ERIC Descriptors[24] and resumes have been formulated in accordance with the ERIC Processing Manual.[25] Computer generated camera-ready copy has been assembled for printing. Computer tapes were prepared for groups wishing to search the AIM/ARM file until non-ERIC items were discontinued under the change to Resources in Vocational Education.

Information Dissemination

AIM/ARM and Resources in Vocational Education have been distributed to nearly 1,600 prime users: state directors, RCU directors, curriculum coordination center directors, head state supervisors, head teacher educators and local directors in large cities. At no additional cost to the sponsor, a subscription service provides AIM/ARM and Resources in Vocational Education to others, many in foreign countries. In addition, AIM/ARM and Resources in Vocational Education is included in ERIC microfiche collections at over 600 locations.

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[24] Thesaurus of ERIC Descriptors (New York, NY: MacMillan Information).

[25] ERIC Processing Manual (Bethesda, MD: ERIC Processing and Reference Facility), July, 1974.

Microfiche backup for documents in AIM/ARM and Resources in Vocational Education is provided by the ERIC Document Reproduction Service (EDRS) with the cooperation of Central ERIC in the National Institute of Education. Many state and regional service agencies also provide microfiche reproduction to users.

## Purpose and Objectives of AIM/ARM

The primary purpose of the AIM/ARM project has been to achieve effective use of research reports, program descriptions, and instructional materials by educational researchers, developers, practitioners, and others who work to improve and extend vocational and technical education. This purpose is supported by eight facilitating objectives:

1. Linking the information network,
2. Preparing materials for the system,
3. Reproducing and distributing AIM/ARM and Resources in Vocational Education,
4. Conducting searches for USOE/BOAE,
5. Consulting with USOE/BOAE and affiliated agencies on network development,
6. Preparing interpretative papers,
7. Preparing information for the Smithsonian Science Information Exchange, and
8. Preparing project reports.

These process objectives and resulting product outputs and project outcomes are explicated in Table 1.

Conduct of the AIM/ARM project has involved meeting with other agencies, providing leadership to other organizations, and serving diverse clientele.

TABLE 1
THE OBJECTIVES, PRODUCTS, AND OUTCOMES OF AIM/ARM

| Process Objectives | Product Outputs | Project Outcomes |
|---|---|---|
| Linking the information network for vocational education | Direct contacts and Journal articles or announcements | A linked network for effective utilization of information |
| Preparing materials for the system | Collection of materials Computerized data base Reports of projects underway | Accessability and availability of research, instructional, and related materials |
| Reproducing and distributing AIM/ARM and Resources in Vocational Education | Issues of AIM/ARM and RIVE (Vol. 8, 9, 10) Annual Indexes of (1975, 1976, 1977) Computer search tapes for paid users | Availability of data base to users |
| Conducting searches for USOE/BOAE | Annotated bibliographies (on- or off-line computer output, screened) | Information for use on specific problems encountered by USOE/BOAE |
| Consulting with USOE/BOAE and affiliated agencies | Brief reports on meetings | Improved network for information dissemination in vocational education |
| Preparing information for Smithsonian Science Information Exchange | Projects in Progress reported by AIM/ARM, RIVE, and "Current Projects" sent to Smithsonian | Awareness of vocational education research by the broader research community |
| Preparing project reports | Quarterly Reports Final Report | Documented accomplishments and cost analysis |

## PROCEDURES

The procedures used by the AIM/ARM Project are described in the following narrative, supplemented with interspersed figures and tables.

### Linking the Information Network

The background of relationships with other elements of a linked network is described in the preceding sections. The planned relationships with respect to the inflow and outflow of information to and from the AIM/ARM Project is charted in Figure 1 and 2.

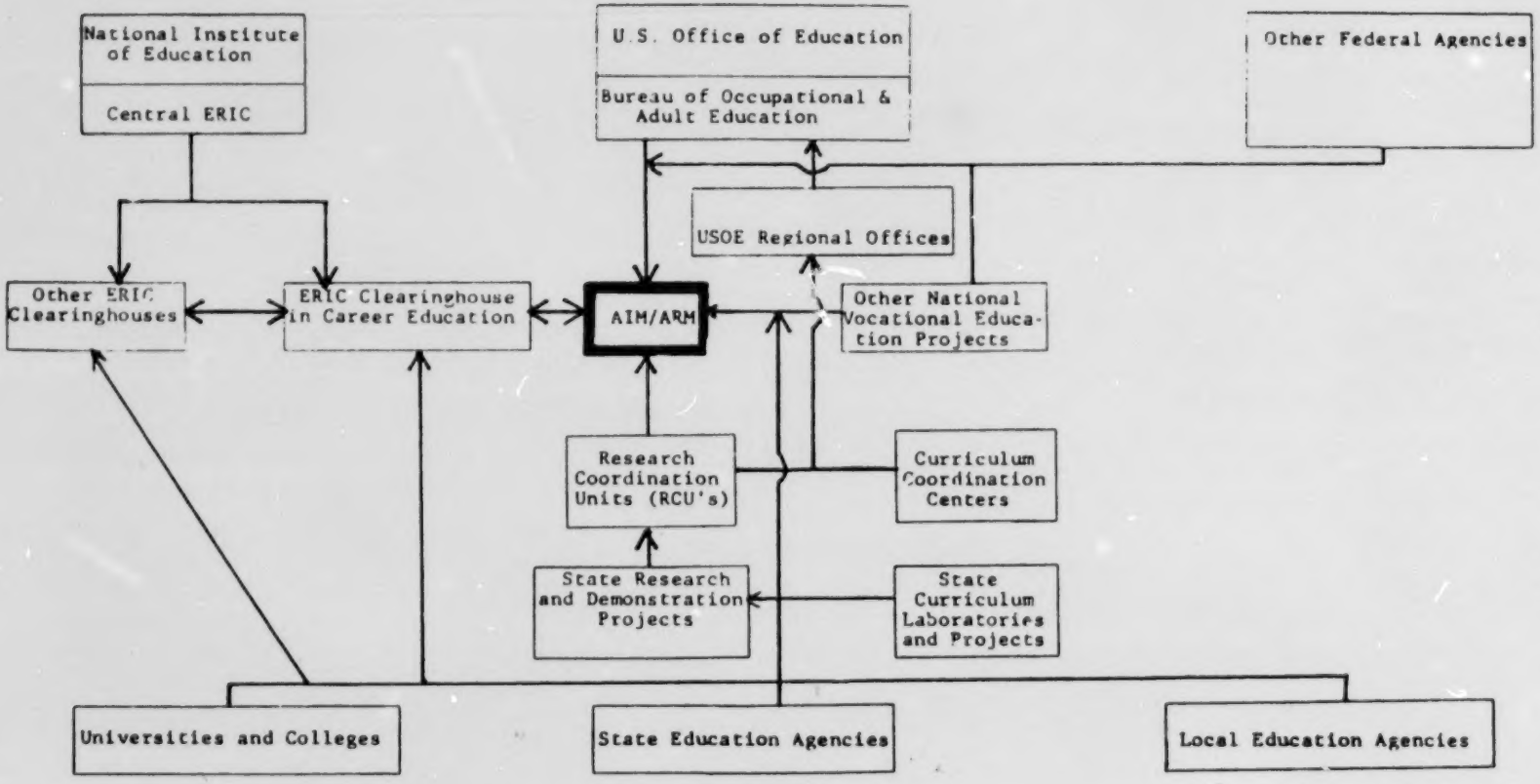



Figure 1 -- Inflow of Information (Reports, Materials, Proposals, etc.)

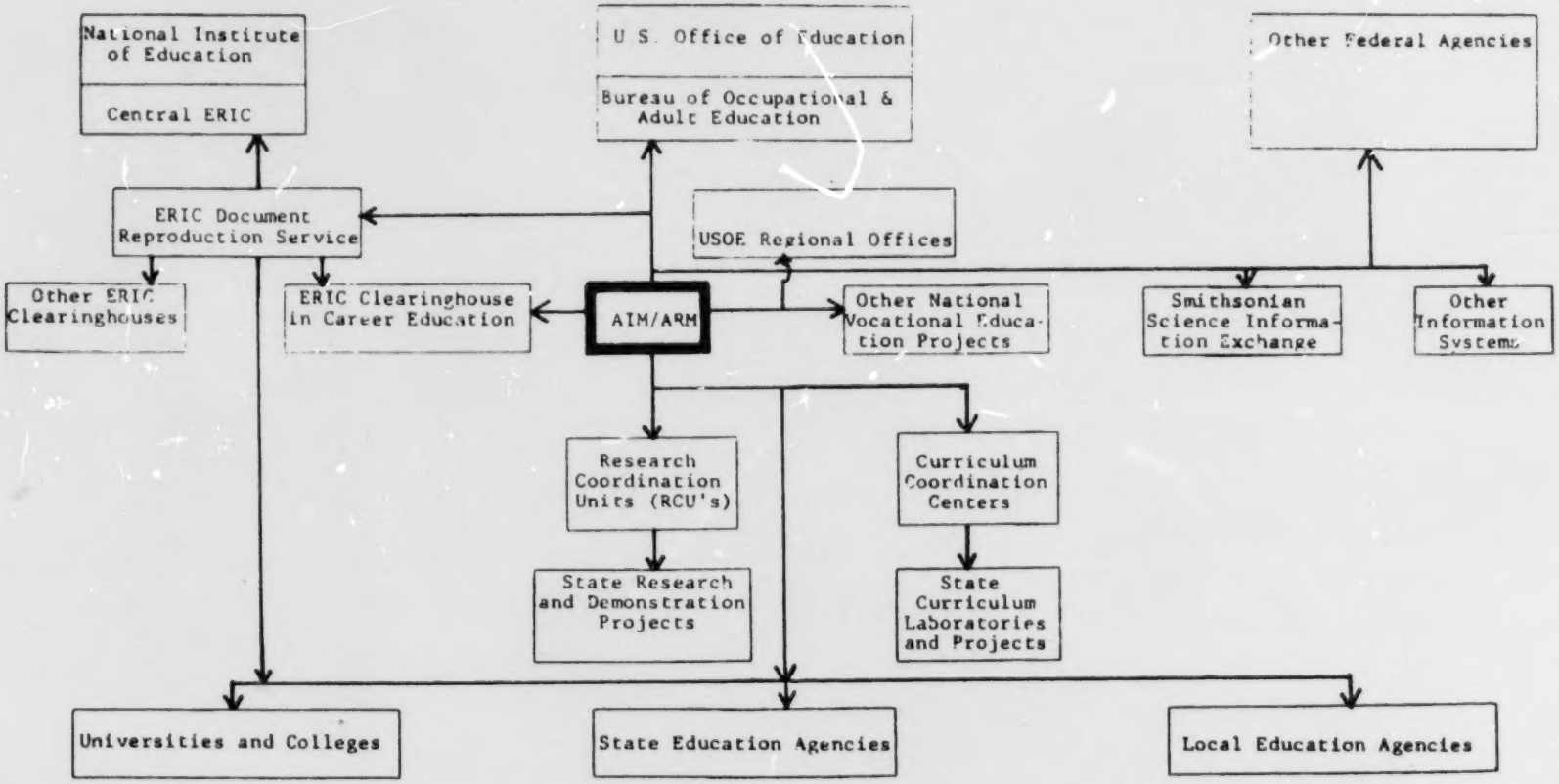



Figure 2 -- Outflow of Information (AIM/ARM, Microfiche, Computer Tapes, AIM/ARM Notes, Bibliographies, Papers, etc.)

These general relationships existed at the outset of the project, but changed somewhat during the course of the project. For example, the ERIC Clearinghouse on Career Education was moved to the National Center at OSU.

## Preparing Materials for the System

Preparation of materials for the AIM/ARM system have included acquisition of materials, selection of materials, processing of materials, input to a computer file of data about the materials, and preparation of the data in printable format. These procedures are described in the following sections. Figure 3 provides a schema of the flow of materials through various processes at the outset of the project. As changes took place in the relationship to other agencies and in the publication of AIM/ARM, changes were made in the workflow as shown in Figures 4 and 5.

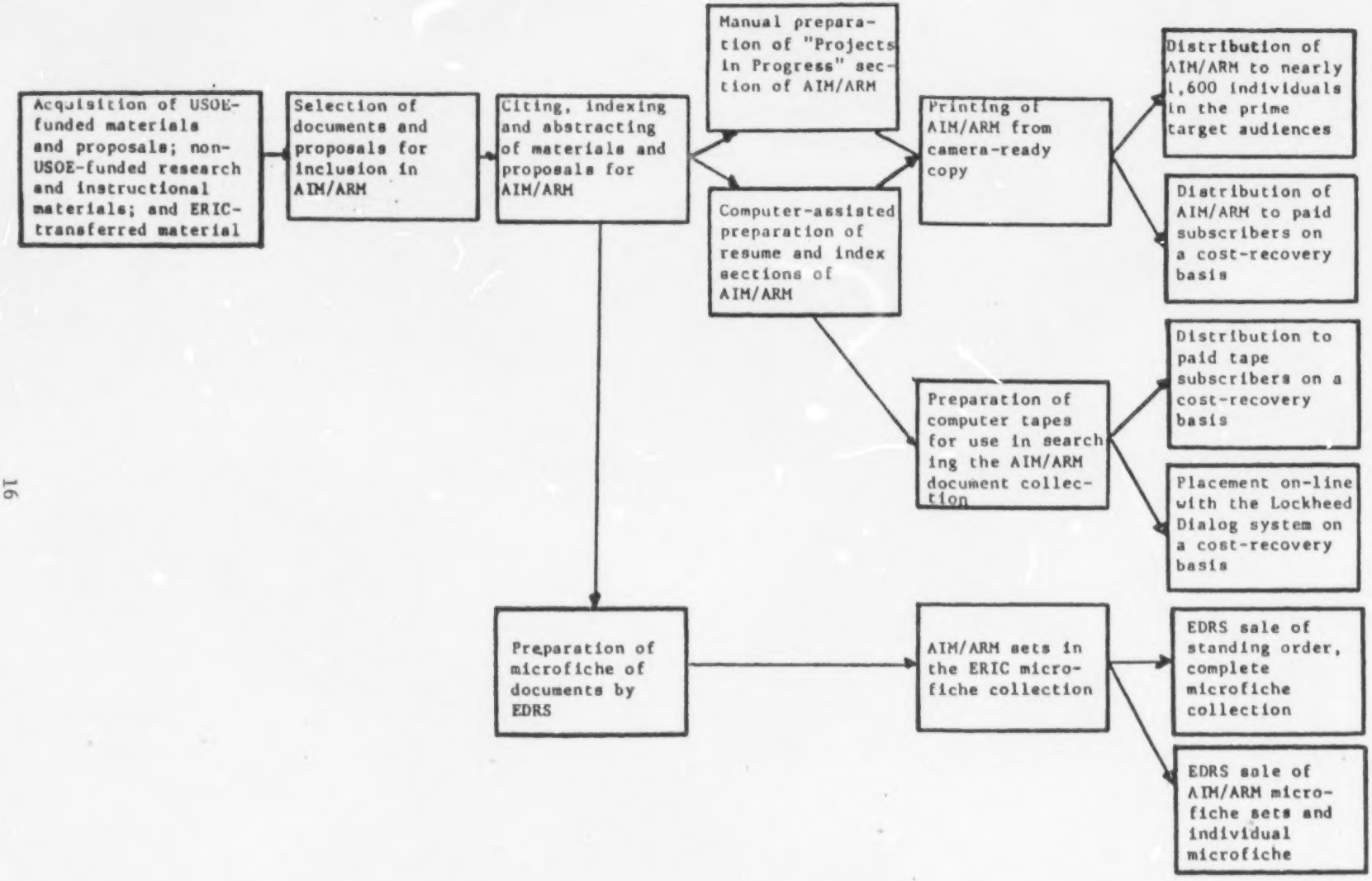
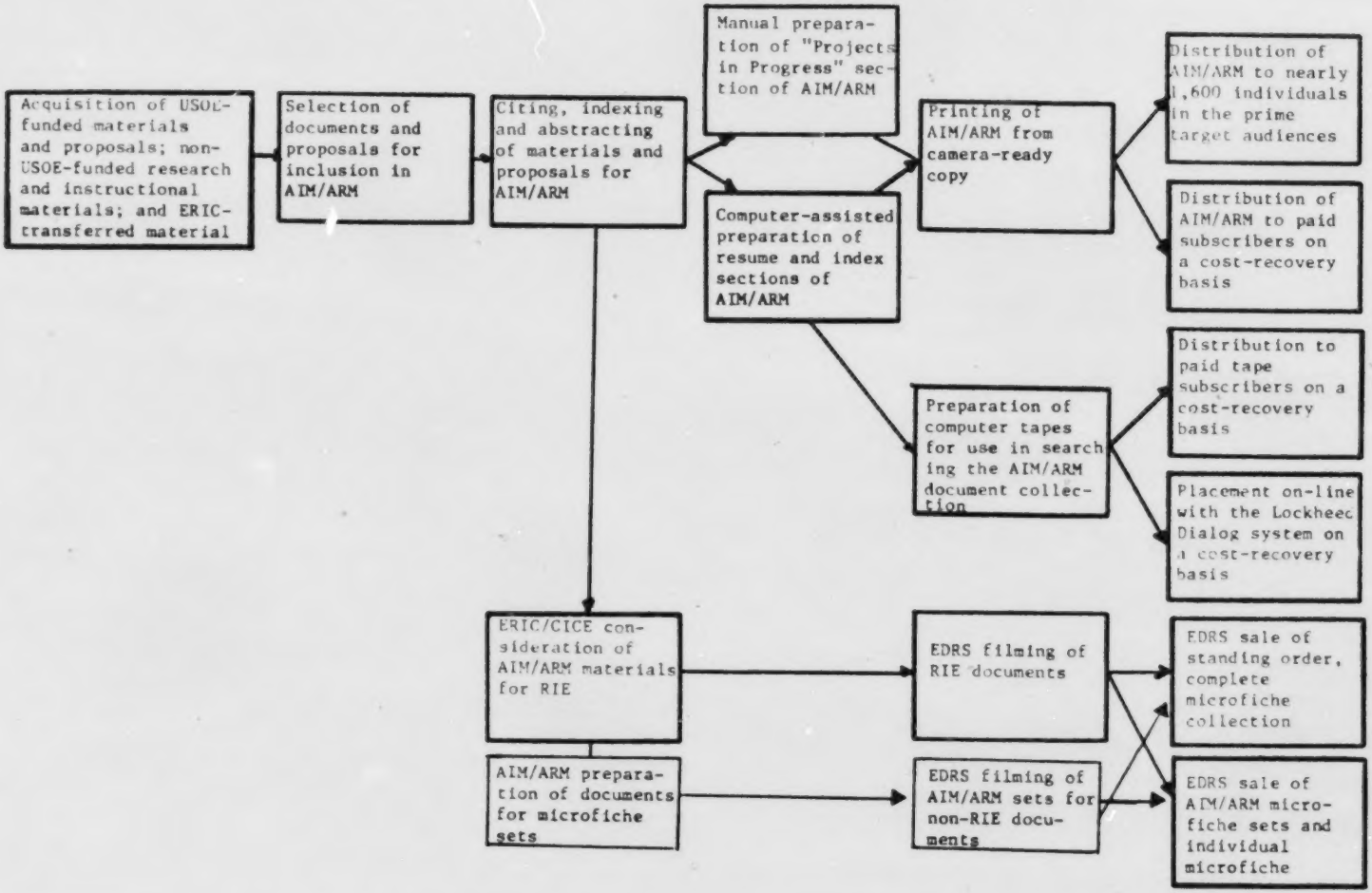

Acquisition of USOE-funded materials and proposals; non-USOE-funded research and instructional materials; and ERIC-transferred material
Selection of documents and proposals for inclusion in AIM/ARM
Citing, indexing and abstracting of materials and proposals for AIM/ARM
Manual preparation of "Projects in Progress" section of AIM/ARM
Computer-assisted preparation of resume and index sections of AIM/ARM
Printing of AIM/ARM from camera-ready copy
Distribution of AIM/ARM to nearly 1,600 individuals in the prime target audiences
Distribution of AIM/ARM to paid subscribers on a cost-recovery basis
Preparation of computer tapes for use in searching the AIM/ARM document collection
Distribution to paid tape subscribers on a cost-recovery basis
Placement on-line with the Lockheed Dialog system on a cost-recovery basis
Preparation of microfiche of documents by EDRS
AIM/ARM sets in the ERIC microfiche collection
EDRS sale of standing order, complete microfiche collection
EDRS sale of AIM/ARM microfiche sets and individual microfiche
ACQUISITION
SELECTION
PROCESSING
PRODUCT PREPARATION
DISTRIBUTION

Figure 3. Generalized Workflow in 1975


Acquisition of USOE-funded materials and proposals; non-USOE-funded research and instructional materials; and ERIC-transferred material
Selection of documents and proposals for inclusion in AIM/ARM
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Preparation of computer tapes for use in searching the AIM/ARM document collection
Distribution to paid tape subscribers on a cost-recovery basis
Placement on-line with the Lockheed Dialog system on a cost-recovery basis
ERIC/CICE consideration of AIM/ARM materials for RIE
AIM/ARM preparation of documents for microfiche sets
EDRS filming of RIE documents
EDRS filming of AIM/ARM sets for non-RIE documents
EDRS sale of standing order, complete microfiche collection
EDRS sale of AIM/ARM microfiche sets and individual microfiche
ACQUISITION
SELECTION
PROCESSING
PRODUCT PREPARATION
DISTRIBUTION

Figure 4. Generalized Workflow in 1976

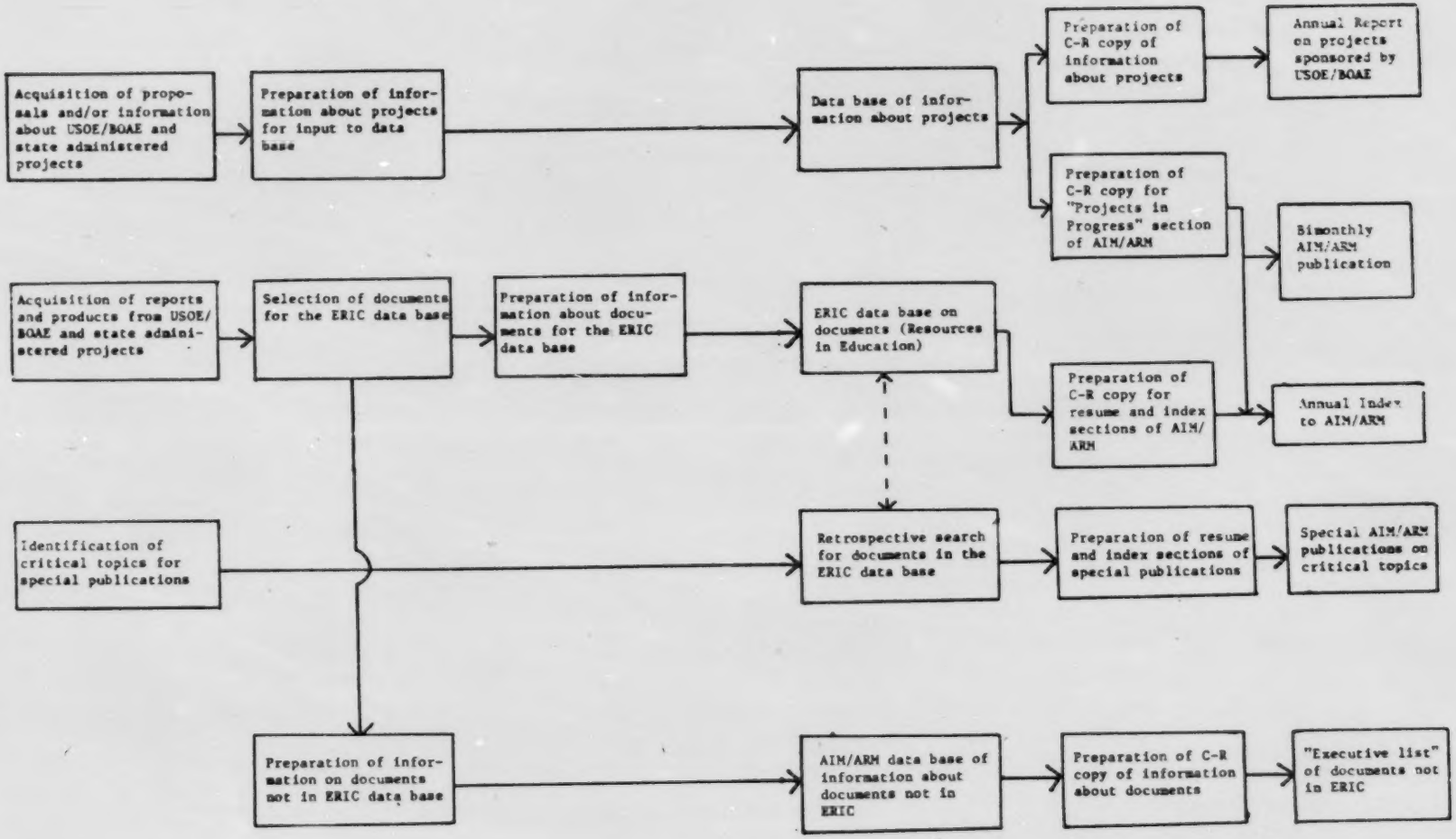
Acquisition of proposals and/or information about USOE/BOAE and state administered projects
Preparation of information about projects for input to data base
Data base of information about projects
Preparation of C-R copy of information about projects
Annual Report on projects sponsored by USOE/BOAE
Preparation of C-R copy for "Projects in Progress" section of AIM/ARM
Bimonthly AIM/ARM publication
Acquisition of reports and products from USOE/BOAE and state administered projects
Selection of documents for the ERIC data base
Preparation of information about documents for the ERIC data base
ERIC data base on documents (Resources in Education)
Preparation of C-R copy for resume and index sections of AIM/ARM
Annual Index to AIM/ARM
Identification of critical topics for special publications
Retrospective search for documents in the ERIC data base
Preparation of resume and index sections of special publications
Special AIM/ARM publications on critical topics
Preparation of information on documents not in ERIC data base
AIM/ARM data base of information about documents not in ERIC
Preparation of C-R copy of information about documents
"Executive list" of documents not in ERIC

Figure 5. Generalized Workflow in 1977

Acquisition of Materials

Four activities were at first undertaken to acquire materials for AIM/ARM:

1. Funded proposals and completed reports were forwarded to AIM/ARM by OE Regional Offices through USOE/BOAE.
2. Curriculum materials were collected from curriculum coordination centers.
3. Unsolicited and solicited materials were acquired from other sources.
4. A joint acquisition announcement by AIM/ARM and the ERIC Clearinghouse was used to acquire materials for both systems.

When Resources in Vocational Education was instituted, all acquisition and selection was handled by the ERIC Clearinghouse. Resources in Vocational Education announces only those items acquired and selected for ERIC.

Selection

At first, all materials submitted by USOE/BOAE were included in AIM/ARM. Later, only those vocational education materials selected by ERIC were announced in Resources in Vocational Education. USOE/BOAE-submitted materials that were not selected by ERIC were recorded on an "Executive List". Basically, the selection criteria for AIM/ARM, Resources in Vocational Education and ERIC materials have been:

a. Of interest to the national vocational education community.

b. Useful in the vocational or technical training settings; that is, useful to business/industry, labor/manpower, and handicapped/rehabilitation training and retraining activities.

c. Related to topics of national priorities or innovations in the field of vocational and technical education, and manpower training, retraining, and rehabilitation programs.

d. Acceptable in terms of reproduction and availability standards.

There are currently three availability levels within the ERIC/EDRS system:

Level 1 - copy available in Microfiche (MF) and Paper Copy (HC, Hard Copy) form.

Level 2 - copy available only in Microfiche (MF) form.

Level 3 - copy not available from the ERIC Document Reproduction Service (EDRS) but available from another, listed source.

Level 1, availability in microfiche and paper copy, did not exist for AIM/ARM through EDRS. However, a user may obtain paper copy of any microfiche frame from local sources which have microfiche-to-paper copy equipment (i.e., microfiche reader-printers). Paper copy is available for Level 1 documents in Resources in Vocational Education.

Processing

Materials passing the criteria for inclusion in AIM/ARM or ERIC fall into three categories:

1. Proposals of funded projects in progress,
2. Interim reports and materials from ongoing projects, and
3. Final reports and materials from completed projects.

Proposals. Funded research and curriculum proposals or abstracts have been used as the basis for entries in the Projects in Progress sections of AIM/ARM and Resources in Vocational Education. Acquired from USOE/BOAE, the RCU's and the curriculum coordination centers, these proposals or abstracts

have provided the information necessary to formulate the resumes. The resumes were at first camera-ready typed, but later submitted to a separate vendor for computer-generated preparation as camera-ready copy.

Reports. Reports (both interim and final) and related products have been cited, indexed, and abstracted by rules outlined in the ERIC Processing Manual. All processing was at first done by the AIM/ARM staff, but later was a cooperative effort with the ERIC Clearinghouse staff.

Full-text Microfiche Sets. Until the change to Resources in Vocational Education, the full text of AIM/ARM documents was included in AIM/ARM microfiche sets listed as separate ED numbers for each issue of AIM/ARM. This procedure was awkward for most users and was discontinued when the practice of including only ERIC documents was instituted. ERIC documents are individually available by ED number in the ERIC microfiche collection.

Data Input to Computer. Data about documents was initially handled on computers at The Ohio State University. Input to tape was by cards. Programs were used to manipulate data for camera-ready output for each issue of AIM/ARM. The data on tape was also available for computer-assisted retrieval by searches. When a separate data base was discontinued, camera-ready output was obtained directly from the ERIC data base by Operations Research, Inc., the contractor for the ERIC Reference and Processing Facility.

## Reproducing and Distributing AIM/ARM

The camera-ready computer outputs are merged with front-matter and other typed materials, proofed, corrected, and submitted to printing contractors chosen by competitive bidding processes conducted by the University. The final output is distributed to nearly 1,600 complimentary users and to paid (cost recovery) subscribers.

## Consulting Within the Network

The consulting services of the AIM/ARM project took on various forms during the course of the project. It included assistance to individual visitors to the National Center; technical advice to other projects; participation in planning for conferences, workshops, and other national efforts; and presentations to national and regional meetings.

## Preparing Interpretative Papers

It was originally planned to prepare interpretative papers in response to USOE/BOAE requests. As it developed, fewer papers were requested than expected, especially during the third year. The project staff developed papers on its own initiative to supplement those requested.

The procedures included defining the topic, conducting a literature search, screening search output, reviewing selected literature, writing interpretative materials, reviewing and revising initial drafts, preparing final drafts and reproducing the results for submission to the sponsor.

## Preparing Information for the Smithsonian Science Information Exchange (SSIE)

After conferring with SSIE officials, early copy of the Projects in Progress section of AIM/ARM have been submitted to SSIE. These are used to prepare announcements of projects in progress in the SSIE system.

## Preparing Reports

Reports of AIM/ARM project activities were prepared for each quarter of project activity. Contents included brief descriptions of accomplishments for each category of activity, major activities, problems, staff changes, and staff development. The USOE project officer was kept informed in telephone conversations, at meetings, and during site visits to the project.

## ACCOMPLISHMENTS

The accomplishments of the AIM/ARM Project are described in the following sections. These include activities conducted during the contract period and deliverables completed and submitted separately.

### Linkage Activities

One objective of the project was to link the elements of the information network for vocational education. At first, it was thought that AIM/ARM Notes, a bimonthly informational newsletter, and a few journal articles could be the major means of accomplishing this objective, but it was determined that a more direct, interpersonal approach would be necessary. To this end, the project director and staff participated actively in a number of conventions, conferences, workshops, and seminars where potential collaborators were involved in solving substantive problems with which an information system could help.

The general approach to developing linkage through meetings was to get involved in planning the meeting activity if possible, to participate in the meeting itself, and to contribute to the meeting program if appropriate. During the course of the project, at least 18 national or regional meetings were attended, as shown in Table 2. This does not include other meetings attended by staff members while engaged in work on other projects with another portion of their time. Working with other groups at these meetings afforded an opportunity to build linkages for acquisition of materials, use of the information system, and dissemination of products.

TABLE 2
PARTICIPATION IN NATIONAL AND REGIONAL MEETINGS

| Meeting | Location | Month/ Year |
|---|---|---|
| American Vocational Association Conventions | Anaheim | 12/75 |
| | Houston | 12/76 |
| | Atlantic City | 12/77 |
| American Educational Research Association Convention | Washington, DC | 3/75 |
| National RCU Personnel Conferences | Denver | 3/75 |
| | Orlando | 3/76 |
| | Annapolis | 3/77 |
| National Network for Curriculum Coordination, Concurrent Conference | Denver | 7/75 |
| Southwide Research Coordinating Council Meetings | Atlanta | 5/75 |
| | Myrtle Beach | 5/76 |
| | Ashville | 10/76 |
| | Louisville | 5/77 |
| Western RCU Meeting | Santa Fe | 8/76 |
| Research Management Conference | St. Louis | 10/76 |
| Part D Impact Conference | Ft. Worth | 2/77 |
| National Professional Development Conference | Arlington, TX | 2/77 |
| National Dissemination Forum | Arlington, VA | 6/77 |
| Information Resources Workshop | Springfield, IL | 10/77 |

At quite a number of these meetings the project director and staff had opportunities to make presentations. Most of these presentations were aimed at achieving a better understanding of the information system, acquisition of materials, and improvement in the quality of research reporting and product development. These presentations are tabulated in Table 3.

TABLE 3
MAJOR PRESENTATIONS BY PROJECT STAFF

| Title/Presentation | Audience/Location | Date |
|---|---|---|
| "Information Retrieval for Operational Planning", Magisos | USOE/BOAE Staff Development Seminar, Washington, DC | 3/11/75 |
| "The Center and the RCUs: Ten Years of Cooperation" and "Standards for Preparation of Proposals and Reports", Magisos | National RCU Conference, Denver | 3/18/75 |
| "An Information System for Vocational Education", Magisos | Special Visit by USSR Education Officials, Columbus | 3/19/75 |
| "Testimony before the Committee on Vocational Education Research and Development", Magisos | Washington, DC | 5/12/75 |
| "The Information and Field Services Division at The Center", Magisos | Midwestern Distributive Education Teacher Education Conference, Columbus | 5/19/75 |
| "AIM/ARM and the Metric Education Project at The Center", Magisos | Southwide Research Coordinating Council, Atlanta | 5/20/75 |
| "AIM/ARM", Magisos | Ohio State Department of Education Staff | 6/3/75 |
| "Information Systems for Vocational Education", Magisos | Western RCU Conference, Santa Fe | 8/25/75 |
| "Research for Vocational Education Policy: A Case Study", Magisos | American Vocational Association, Anaheim | 12/4/75 |
| "Preparing a Research Publication", Magisos | American Vocational Association, Anaheim | 12/4/75 |
| "Will Our Products Make Dust or Gather Dust?", Magisos | Research Management Conference, St. Louis | 10/7/76 |
| "What's New at the ERIC Clearinghouse on Career Education", Magisos and Peterson | American Vocational Association, Houston | 12/76 |

TABLE 3
MAJOR PRESENTATIONS BY PROJECT STAFF
(continued)

| Title/Presentation | Audience/Location | Date |
|---|---|---|
| "Facilitating Dissemination and Utilization", Magisos | National Professional Development Conference, Arlington, TX | 2/1/77 |
| "Strategies for the National Dissemination of Project Results", Magisos | Part D Impact Conference, Fort Worth, TX | 2/24/77 |
| "An Integrative Analysis of R&D Studies" and "New Quality Standards for ERIC and AIM/ARM and Implications for State Reports", Magisos | National RCU Conference, Annapolis | 4/18-21/77 |
| "Preparing Research Articles", Kowle | American Vocational Association | 12/77 |
| "Preparing Reports", Peterson and Jezierski | State Career Education Coordinators Conference (two sessions) | 12/6/77 |
| "Preparing Reports", Jezierski and Magisos | State Career Education Coordinators Conference (two Sessions) | 12/13/77 |

## Materials Prepared for the System

During the contract period, 3,600 instructional and research materials and 1,189 projects in progress were announced in AIM/ARM or Resources in Vocational Education. Under the AIM/ARM publication, resumes were prepared by project staff for input to the AIM/ARM computer file. Under Resources in Vocational Education, the project staff assisted the ERIC Clearinghouse staff with vocational education inputs to Resources in Education (RIE). Vocational Education materials appearing in RIE were then reannounced in Resources in Vocational Education to make them more accessible to vocational educators. The numbers of materials announced by issue, are shown in Table 4.

TABLE 4
MATERIALS ANNOUNCED IN PROJECT PUBLICATIONS

| Publication | Instructional and Research Resumes | Projects in Progress |
|---|---|---|
| AIM/ARM | | |
| Vol. 8, No. 2 | 200 | 139 |
| Vol. 8, No. 3 | 200 | 139 |
| Vol. 8, No. 4 | 150 | 59 |
| Vol. 8, No. 5 | 250 | 38 |
| Vol. 8, No. 6 | 200 | 76 |
| Vol. 9, No. 1 | 200 | 87 |
| Vol. 9, No. 2 | 200 | 77 |
| Vol. 9, No. 3 | 200 | 83 |
| Vol. 9, No. 4 | 200 | 58 |
| Vol. 9, No. 5 | 200 | 91 |
| Vol. 9, No. 6 | 200 | 21 |
| Vol. 10, No. 1 | 200 | 58 |
| Resources in Vocational Education | | |
| Vol. 10, No. 2 | 200 | 71 |
| Vol. 10, No. 3 | 200 | 25 |
| Vol. 10, No. 4 | 200 | 73 |
| Vol. 10, No. 5 | 200 | 15 |
| Vol. 10, No. 6 | 200 | 24 |
| Vol. 11, No. 1 | 200 | 55 |
| TOTALS | 3,600 | 1,189 |

Search tapes were made available to paid (cost recovery) subscribers through Volume 9. Subscribers included:

National Library of Australia
Oklahoma State University
University of Tennesse
Iowa State University
University of Northern Colorado
Dialog, Lockheed Missile and Space Company
Florida State Department of Education
North Arundel Vocational-Technical Center, MD
Missouri State Department of Elementary and Secondary Education
VEIN, Millersville State College, PA
Computer Microfilm International Corporation, VA

Most of these subscribers used the search tapes in their service capacity. All materials announced in Resources in Vocational Education may be retrieved by computer in searches of the ERIC tapes.

AIM/ARM microfiche sets were developed for each issue of AIM/ARM (through Vol. 9). Since then, items have been available on microfiche as individual ED numbers in the ERIC microfiche collection.

## Reproduction and Distribution of AIM/ARM and Resources in Vocational Education

The AIM/ARM and Resources in Vocational Education publications were distributed to nearly 1,600 prime users including state directors of vocational education, state RCU directors, curriculum coordination center directors, head state supervisors or consultants, head teacher educators, and local directors in larger cities. The specific issues were:

Abstracts of Instructional and Research Materials in Vocational and Technical Education (AIM/ARM)

Volume 8, Number 2
Volume 8, Number 3
Volume 8, Number 4

Abstracts of Instructional and Research Materials in Vocational and Technical Education (AIM/ARM)

Volume 8, Number 5
Volume 8, Number 6

Volume 9, Number 1
Volume 9, Number 2
Volume 9, Number 3
Volume 9, Number 4
Volume 9, Number 5
Volume 9, Number 6

Resources in Vocational Education

Volume 10, Number 1
Volume 10, Number 2
Volume 10, Number 3
Volume 10, Number 4
Volume 10, Number 5
Volume 10, Number 6
Volume 11, Number 1

Annual Index

Volume 8, 1975
Volume 9, 1976
Volume 10, 1977

## Literature Searches for the Sponsor

Searches were conducted as requested by the USOE project officer on behalf of agency personnel. In addition, searches were conducted as the basis for bibliographies and interpretative papers being developed by the project staff. Occasionally a search was conducted for a special visitor to demonstrate the capacity of the system or for staff training purposes. Search titles are shown in Table 5.

TABLE 5
COMPUTER SEARCHES CONDUCTED BY THE PROJECT STAFF

| Search Series Number | Abbreviated Title |
|---|---|
| 75-1 | Efficiency and Effectiveness in Vocational Education Program Management |
| 75-2 | Experience Based Career Education |
| 75-4 | Proposal Evaluation |
| 75-5 | Sex Stereotyping and Occupational Aspiration |
| 75-6-10 | Guidance |
| 75-3 | Evaluation of Work Experience |
| 75-11 | Nuclear Power Technology |
| 75-3/13 | Evaluation of Work Experience |
| 75-11/12 | Nuclear Power Technilogy |
| 75-14 | Summer and Youth Employment |
| 75-15 | Theories, Models, and Resources for Career Education |
| 75-16 | Curriculum Development in State Departments of Education |
| 75-17 | Bilingual Vocational Education (Part C) |
| 75-18 | Bilingual Education and Motor Skills |
| 75-19 | Vocational Correctional Education (Part C) |
| 75-20 | Vocational Migrant Education (Part C) |
| 75-21/22 | Handicapped (Part C) |
| 75-23/24 | Individualization and Modularization (Part C) |
| 75-25/26 | Adult Vocational Education |
| 75-27/28 | Postsecondary Vocational Education |

TABLE 5
COMPUTER SEARCHES CONDUCTED BY THE PROJECT STAFF
(continued)

| Search Series Number | Abbreviated Title |
|---|---|
| 75-29/30 | Impact of Vocational Education on Unemployment |
| 75-31/32 | History and Philosophy of Vocational Education |
| 75-33/34 | Background materials for article |
| 75-35/36 | Career Education Materials for Deaf Students (Demonstration Search) |
| 75-37/38 | Facilities for Physically Handicapped Senior Citizens (Training search for D. Ellsworth) |
| 75-39/40 | Training Search for staff; demonstration of on-line techniques |
| 75-41/42 | Training Search for staff; demonstration of on-line techniques |
| 75-43/44 | Residential Training Programs for EMR's (Training search for K. Jezierski) |
| 75-45/46 | Training Search conducted by D. Ellsworth |
| 75-47/48 | Training Search conducted by D. Ellsworth |
| 75-49/50 | Resources for Counselors on Occupational Information (Training search for N. Jones) |
| 75-51/52 | Print out of VT-ED numbers for review and synthesis |
| 75-53/54 | Training search on how to search Social Science Citations Index |
| 75-55/56 | Training search on how to search NTIS file |
| 75-57/58 | Information needs of children (Demonstration search for Joe Blake) |
| 75-59/60 | Training search for P. Schroeder in the ERIC and NTIS files |

TABLE 5
COMPUTER SEARCHES CONDUCTED BY THE PROJECT STAFF
(continued)

| Search Series Number | Abbreviated Title |
|---|---|
| 75-61/62 | Demonstration example of AIM/ARM capabilities for ERIC Interchange article |
| 75-63/64 | Career Education: Resources, Bibliographies (Training Search) |
| 75-65/66 | Child Care and Early Childhood Programs (Demonstration for ERIC/ECE) |
| 76-1 | Manpower Information Systems |
| 76-2 | Future Directions for Health Occupations Education |
| 76-3 | Verification of VT-ED numbers for cross-reference list in the seven service area bibliographies |
| 76-4-6 | Vocational Education and Sex Stereotyping |
| 76-7-9 | Search conducted for materials at International Conference:<br>-Vocational Education and Policy Formation and Planning<br>-Vocational Education Curriculum Development<br>-Vocational Education Staff Development |
| 76-10 | Verification of VT-ED numbers for Vol. 9, No. 1 cross-reference list |
| 76-11 | Demonstration search for National Advisory Council on Vocational Education meeting |
| 76-12 | National Vocational Education research on:<br>-Evaluation studies and statistical research<br>-Vocational Education legislation<br>-Background of Education Research Centers |
| 76-13 | Verification of VT-ED numbers for Vol. 9, No. 2 cross-reference list |

TABLE 5
COMPUTER SEARCHES CONDUCTED BY THE PROJECT STAFF
(continued)

| Search Series Number | Abbreviated Title |
|---|---|
| 76-14 | Career Education Curriculum Materials for Racial Minorities in Urban Settings |
| 76-15 | Education Vouchers used to Reimburse Employers for Programs Attended by Employees at the Secondary and Postsecondary Levels |
| 76-16-19 | 1. Comprehensive Systems of Guidance, Counseling, Placement, and Follow-through<br>2. Equal Access and Opportunities<br>3. Sex role stereotyping and sex bias<br>4. Education and work programs<br>5. Adult and Postsecondary Vocational Education<br>6. Curriculum management and instructional materials<br>7. Personnel Development for Vocational Education<br>8. Administration of Vocational Education at state and local levels |
| 76-20 | Planning |
| 76-21 | Youth Unemployment |
| 76-22 | Youth Unemployment |
| 76-24 | Educational Planning and the Futures of Society |
| 77-058 | Manpower Information Systems and Employment Forecasting |
| 77-058 | Guidance, Counseling Information Systems for Adults |
| 77-059 | Counseling and Guidance Systems for Adults (Demonstration search) |
| 77-112 | Author search |
| 77-118 | Vocational Education and Math for Secondary Education |

TABLE 5
COMPUTER SEARCHES CONDUCTED BY THE PROJECT STAFF
(continued)

| Search Series Number | Abbreviated Title |
|---|---|
| 77-119 | 1. Effectiveness of Vocational Education Programs at the Secondary, Postsecondary, and Adult Levels with respect to Student Employability and Job Satisfaction for Special Populations |
| | 2. Effectiveness of Vocational Education Programs at the Secondary, Postsecondary, and Adult Levels with respect to Student Employability and Job Satisfaction |
| 77-50 | Reorder prints for BB series #43 entitled: Vocational Education for Special Needs Populations (original copy not usuable) |
| 77-56 | Alternative Delivery Systems for Vocational Education for Rural Residents at the Post-secondary and Adult Education Levels and Sex Discrimination and Sex Bias with respect to Men |
| 77-57 | Solar Energy: Training Materials, Programs, and Manpower Needs |
| 78-008 | Competencies Needed by Vocational Teachers, Administrators, Teacher/Educators, and Support Personnel |

## Network Consultation

Consulting with other agencies was aimed at developing collaborative linkages and increasing the capacity for information exchange. Agencies and organizations with which the project staff consulted during the contract period included:

Educational Resources Information Center (Central ERIC, National Institute of Education

ERIC Document Reproduction Service (Computer Microfiche International Corporation)

ERIC Processing and Reference Facility (Operations Research, Inc.)

Department of Defense

Department of the Army

Department of Labor

U.S. Office of Education, Bureau of Occupational and Adult Education (Research, Demonstration, and Curriculum Development, Professional Development, and Adult Education)

Smithsonian Science Information Exchange

PREDICASTS (Case Western Reserve University)

V-TECS (Southern Association of Schools and Colleges)

American Vocational Association

American Association of School Librarians (American Library Association)

Alaska Vocational Association

American Vocational Journal

## Other Project Products

In addition to the bimonthly abstract journals and annual indexes (21 publications) listed in an earlier section, the AIM/ARM Project staff developed 34 published and 14 unpublished products. This makes a total of 69 products during the course of the three year project! All of the AIM/ARM Project publications are listed as a group in Appendix A and are described in the following sections.

### Instructional Materials Catalogs

Instructional materials catalogs were prepared for each of the occupational service areas. Each of these seven catalogs are a second volume of a series which began in 1972. Each of the earlier volumes are cited on page 3. Basically, the catalogs are a partition of the AIM/ARM file from 1972 through 1975. The user may use the subject, author or institutional indexes in each publication to identify specific instructional materials for which resumes (i.e., citations and abstracts) are given. The full text of most of these instructional materials are available in the ERIC microfiche collection as individual ED numbers or in AIM/ARM microfiche sets. A complete cross-reference to ED numbers is available in a more recent AIM/ARM Project publication.[26] The complete citations for the seven catalogs are:

Thomas, Willie H., Compiler. Agricultural Education Instructional Materials. Columbus: The Center for Vocational Education, The Ohio State University, 1976, 257 pp. (ED 130 141)

Mason, Emmett E., Compiler. Business and Office Education Instructional Materials. Columbus: The Center for Vocational Education, The Ohio State University, 1976, 296 pp. (ED 133 553)

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[26] Jezierski, Kathleen and Mitric, Joan, Compilers. The Complete VT-ED Cross Reference Index for the AIM/ARM System. Columbus: The National Center for Research in Vocational Education, The Ohio State University, February 1978.

Blue, James, Compiler. Distributive Education Instructional Materials. Columbus: The Center for Vocational Education, The Ohio State University, 1976, 263 pp. (ED 128 618)

Eshelby, Don, Compiler. Health Occupations Education Instructional Materials. Columbus: The Center for Vocational Education, The Ohio State University, 1976, 129 pp. (ED 128 617)

Keyes, Erma D., Compiler. Home Economics Education Instructional Materials. Columbus: The Center for Vocational Education, The Ohio State University, 1976, 519 pp. (ED 128 619)

Mason, Emmett E., Compiler. Industrial Arts Education Instructional Materials. Columbus: The Center for Vocational Education, The Ohio State University, 1976, 229 pp. (ED 128 621)

Kapes, Jerome T., Compiler. Trade and Industrial Education Instructional Materials. Columbus: The Center for Vocational Education, The Ohio State University, 1976, 435 pp. (ED 128 620)

Topical Bibliographies

The AIM/ARM Project staff developed 14 topical bibliographies to support USOE/BOAE/DRD grant application solicitations during 1975 and 1976. The bibliographies were prepared to be available for cost-recovery sale at the time of the solicitation announcement. Each of the bibliographies included resumes of recent, relevant literature (e.g., reports and articles) and current projects in progress which would help grant applicants to build upon previous and current work and to avoid duplication of effort. The first bibliographies prepared for this purpose were completed in an earlier grant period and are cited on page 6. Under the current contract, the first three bibliographies were prepared in support of the Part D solicitation in late 1975:

Stakelon, Ann E. and Magisos, Joel H., Compilers. Experience Based Career Education. (Bibliography Series No. 27) Columbus: The Center for Vocational Education, The Ohio State University, October 1975, 41 pp. (ED 118 925)

Stakelon, Ann E. and Magisos, Joel H., Compilers. Evaluation of Work Experience, Cooperative Education, and Youth Manpower Programs (Bibliography Series No. 28) Columbus: The Center for Vocational Education, The Ohio State University, October 1975, 65 pp. (ED 117 184)

Stakelon, Ann E. and Magisos, Joel H., Compilers. Sex Stereotyping and Occupational Aspirations (Bibliography Series No. 29) Columbus: The Center for Vocational Education, The Ohio State University, October 1975, 43 pp. (ED 118 926)

During the same year, four bibliographies were prepared in support of the Part C solicitation:

Magisos, Joel H. and Stakelon, Ann E., Compilers. Adult Vocational Education (Bibliography Series No. 30) Columbus: The Center for Vocational Education, The Ohio State University, October 1975, 23 pp. (ED 133 575)

Magisos, Joel H. and Stakelon, Ann E., Compilers. Post-secondary Vocational Education (Bibliography Series No. 31) Columbus: The Center for Vocational Education, The Ohio State University, October 1975, 21 pp. (ED 133 574)

Magisos, Joel H. and Stakelon, Ann E., Compilers. Individualization and Modularization of Vocational Education Instructional Materials (Bibliography Series No. 32) Columbus: The Center for Vocational Education, The Ohio State University, October 1975, 55 pp. (ED 133 573)

Magisos, Joel H. and Stakelon, Ann E., Compilers. Special Needs Populations (Bibliography Series No. 33) Columbus: The Center for Vocational Education, The Ohio State University, October 1975, 139 pp. (ED 133 607)

These were followed in 1976 with seven bibliographies for the Part C solicitation:

Budke, Wesley E. and Jezierski, Kathleen A., Compilers. Equal Access and Opportunity in Vocational Education (Bibliography Series No. 36) Columbus: The Center for Vocational Education, The Ohio State University, November 1976, 25 pp.

Moore, Allen B. and Jezierski, Kathleen A., Compilers. Education and Work Programs (Bibliography Series No. 37) Columbus: The Center for Vocational Education, The Ohio State University, November 1976, 32 pp.

Moore, Allen B. and Jezierski, Kathleen A., Compilers. Adult and Postsecondary Vocational Education (Bibliography Series No. 38) Columbus: The Center for Vocational Education, The Ohio State University, November 1976, 27 pp.

Budke, Wesley E. and Jezierski, Kathleen A., Compilers. Curriculum Management and Instructional Materials for Vocational Education (Bibliography Series No. 39) Columbus: The Center for Vocational Education, The Ohio State University, November 1976, 27 pp.

Magisos, Joel H. and Jezierski, Kathleen A., Compilers. Personnel Development for Vocational Education (Bibliography Series No. 40) Columbus: The Center for Vocational Education, The Ohio State University, November 1976, 27 pp.

Moore, Allen B. and Jezierski, Kathleen A., Compilers. Comprehensive Systems of Guidance, Counseling, Placement, and Follow-through (Bibliography Series No. 41) Columbus: The Center for Vocational Education, The Ohio State University, November 1976, 38 pp.

Magisos, Joel H. and Jezierski, Kathleen A., Compilers. Administration of Vocational Education (Bibliography Series No. 42) Columbus: The Center for Vocational Education, The Ohio State University, November 1976, 14 pp.

Early in 1977, four additional bibliographies were developed on emerging problems and concerns that had not necessarily been the subject of a recent research priority. These were:

Magisos, Joel H. and Jezierski, Kathleen A., Compilers. Vocational Education for Special Needs Populations (Bibliography Series No. 43) Columbus: The Center for Vocational Education, The Ohio State University, March 1977, 33 pp.

Moore, Allen B. and Jezierski, Kathleen A., Compilers. Evaluation of Vocational Education Programs (Bibliography Series No. 44) Columbus: The Center for Vocational Education, The Ohio State University, March 1977, 26 pp.

Budke, Wesley E. and Jezierski, Kathleen A., Compilers. Planning of Vocational Education Programs (Bibliography Series No. 45) Columbus: The Center for Vocational Education, The Ohio State University, March 1977, 14 pp.

Magisos, Joel H. and Jezierski, Kathleen A., Compilers. Youth Unemployment (Bibliography Series No. 46) Columbus: The Center for Vocational Education, The Ohio State University, March 1977, 29 pp. (ED

Interpretative Papers

The project staff developed 14 interpretative papers during the three year period. Seven of these were specifically requested by the USOE project

Winkfield, Patricia W. Occupational and Self Awareness and Exploration. December 1975, 17 pp.

Winkfield, Patricia W. Student Self Assessment and Occupational Decision Planning. February 1976, 12 pp.

Moore, Allen B. Student Cognitive, Affective, and Psychomotor Growth. February 1976, 9 pp.

Moore, Allen B. Placement, Follow-up, and Manpower Information. February 1976, 18 pp.

Winkfield, Patricia W. Articulated Occupational Guidance Systems in Local Education Agencies. February 1976, 5 pp.

Moore, Allen B. Inservice Training System for Counselors, Instructional Personnel, Administrators, Parents, Community Leaders, Business, Industry, and Other Service Agency Personnel. February 1976, 14 pp.

Moore, Allen B. Information Inputs and Evaluation of Comprehensive Guidance Systems. February 1976, 16 pp.

During the last year of the project, only one specific interpretative paper (i.e., on sex bias) was requested. The project staff developed six others on issues or problem areas which were deemed important. The citations for all seven are:

Miller-Beach, Audni. A Review of Literature Concerning Behaviors Which Inhibit or Reduce Sex Bias and Sex Role Stereotyping. January 1978, 19 pp.

Moore, Allen B. Energy Problems Provide Job Opportunities. January 1978, 12 pp., (ED 142 794)

Kowle, Carol P. Issues and Policy in Vocational Education, 1977, 13 pp. (Published by the ERIC Clearinghouse on Career Education as Information Series No. 121. ED 149 190)

Kowle, Carol P. Vocational Education and CETA, February 1978, 11 pp.

Kowle, Carol P. Emerging Trends in R&D Dissemination: Focus on Linkers and Users. February 1978, 12 pp.

Hull, William L. Formulating Dissemination Strategies. January 1978, 19 pp.

Magisos, Joel H. and Kowle, Carol P. Providing Information Services to Vocational Education. February 1978, 25 pp.

None of these interpretative papers were published; that is, none were offered for cost recovery sale or widely distributed.

Integrative Analyses

The development of three integrative analysis papers were specified in the project contract. Two of these were developed by project staff and one was commissioned to an expert at another institution. Moore worked with a panel of experts and practitioners to review manpower information system projects and synthesize conclusions. Magisos and Moore integrated the findings of five studies which had evaluated vocational education, vocational education research and development, and manpower research and development. An expert group reviewed their initial draft. Geigle was commissioned to work with a panel of experts to review and synthesize the reports from the FY 1975 Part C projects on the management information system priority. The specific publications are:

Geigle, Erwin K. Management Information Systems (Information Series No. 128). Columbus: The National Center for Research in Vocational Education, The Ohio State University, 1978, 75 pp.

Magisos, Joel H. and Moore, Allen B. Evaluation of Vocational Education R&D Programs: An Integrative Analysis of Recent Studies. Columbus: The Center for Vocational Education, The Ohio State University, 1977, 29 pp. (ED 142 793)

Moore, Allen B. Manpower Information Systems. Columbus: The Center for Vocational Education, The Ohio State University, February 1977, 55 pp. (ED 142 746)

Magisos presented the Magisos and Moore paper to the National RCU Personnel Conference at Annapolis in 1977. Magisos presented the Geigle paper to the National RCU Personnel Conference in Seattle in 1978.

Special Publications

During 1976 and 1977, the project director made presentations to three major national conferences to emphasize the need to improve the quality of research reports and educational products. Considerable demand developed for a concise guide to writing research reports. Such a guide was developed:

Jezierski, Kathleen. Writers' Guide to Publication Development. Columbus: The National Center for Research in Vocational Education, The Ohio State University, February 1978, 32 pp.

Throughout the course of the AIM/ARM publication, there had been a need for a comprehensive cross reference index to AIM/ARM documents in the ERIC system. Such an index would, of course, be out of date with each succeeding issue of AIM/ARM. The cross referencing was no longer necessary for Resources in Vocational Education. To simplify cross referencing for the first nine volumes of AIM/ARM, a complete index was developed:

Jezierski, Kathleen., and Mitric, Joan, Compilers. The Complete VT-ED Cross Reference Index for the AIM/ARM System. Columbus: The National Center for Research in Vocational Education, The Ohio State University, February 1978

Special Compilations

The project staff compiled information about current projects funded under Parts C, D, and I of the Vocational Education Amendments of 1968 for FY 1976 and FY 1977. These compilations were published and distributed during 1977 and 1978 as:

Budke, Wesley E. and Gordon, Ruth, Compilers. Current Projects in Vocational Education - FY 1976. Columbus: The Center for Vocational Education, The Ohio State University, February 1977, 270 pp. (ED 138 782)

Sellers, Lois Ann and Gordon, Ruth, Editors. Current Projects in Vocational Education - FY 1977. Columbus: The National Center for Research in Vocational Education, The Ohio State University, February 1978, 246 pp.

The project staff also prepared special listings of project reports which were not entered in the ERIC system nor announced in Resources in Vocational Education. These were:

Budke, Wesley E. and Gordon, Ruth. Documents Resulting from Projects Supported by the Vocational Education Amendments of 1968 (Parts C, D, I, and J): Annual Executive List, February 1978, 177 pp.

Budke, Wesley E. and Gordon, Ruth. Documents Resulting from Projects Supported by the Vocational Education Amendments of 1968 (Parts C, D, I, and J): Semiannual Executive List. September 1977, 97 pp.

## Smithsonian Science Information Exchange (SSIE)

It wasoriginally thought that it would be necessary to prepare information about projects in progress on SSIE forms, but it was found that SSIE could accept information in the same form as found in AIM/ARM and Resources in Vocational Education. The project in progress section of these publications and Current Projects in Vocational Education (both FY 1976 and FY 1977) were sent routinely to SSIE during the entire course of the project.

## Unpublished Project Reports

Quarterly progress reports were prepared for each quarter of project performance. These reports are listed in Appendix A along with the present final report.

## SUMMARY AND CONCLUSIONS

The three-year AIM/ARM Project resulted in 69 products and 13 reports totaling over 8,000 pages of printed material. Notable among these products were 11 issues of AIM/ARM, seven issues of Resources in Vocational Education, and three annual Indexes which announced 3,600 reports and other products, and 1,189 projects in progress. Other products included topical bibliographies, instructional materials catalogs, interpretative papers, integrative analyses, listings, and special compilations. The project staff conducted 106 literature searches, collaborated with 14 other agencies, and made 20 presentations at 18 national and regional meetings.

Major emphasis was given to improving the quality of input to information systems through presentations to national meetings of report generators, development of a writers' guide, and raising standards for inclusion of materials in AIM/ARM. Emphasis also was given to helping users to improve project design, principally through publication of bibliographies for use by research grant applicants. Announcement of projects in progress, especially Federally-administered, was expanded through publication of Current Projects in Vocational Education.

The retirement of the AIM/ARM format and the introduction of Resources in Vocational Education brought with it other changes. The AIM/ARM project discontinued announcement of materials which did not qualify for ERIC's Resources in Education, thereby obviating the need for separate computer search tapes and microfiche sets. It also was possible to improve print quality, reduce the size of the publication, and reduce printing costs without reducing the number of items announced.

The project staff was able to serve the sponsors requirements for literature searches and interpretative papers at various times throughout the project. One notable accomplishment was the integrative analysis of reports emanating from USOE-funded projects under three priority areas. These synthesized reviews of research helped to provide new benchmarks for further work, something that the individual reports did not do, taken separately.

The AIM/ARM Project focused upon data base building, information access, knowledge integration and interpretation, and services. Many of these responsibilities will be continued in the Clearinghouse and Dissemination and Utilization functions of The National Center for Research in Vocational Education.

There will be a continuing need for an accessible data base about instructional and research materials; in fact, this data base should be expanded to include non-print instructional media, military-developed vocational education curricula, organizations, and personnel. It is these that constitute the resources for the improvement of vocational education. The new format for Resources in Vocational Education was designed with this in mind and it is hoped that it will be expanded to be a comprehensive source of information about printed materials, media, projects, organizations, and people.

The need for knowledge transformation has been apparent to some scholars for some time; for example, COVERD expresses this need in its report.[27] AIM/ARM accomplished rather specific interpretative work and three major

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[27] Assessing Vocational Education Research and Development (Washington, DC: National Academy of Sciences), 1976 (ED 128 654).

integrative analyses, but all were rather specific applications. What is needed is a planned, long-term program of knowledge transformation which incorporates such intellectual processes as comprehension (interpretation), application, analysis, synthesis, and evaluation. A number of publication types, as well as other media forms, could result. A well planned knowledge transformation program could prove extremely cost effective because it could draw the comprehensive conclusions not otherwise possible, identify systemic gaps in the research literature, uncover methodological flaws in research projects, and provide a basis for building on, rather than duplicating, previous research.

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Health Occupations Education from AIM, 1967-1971, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1972, Bibliography Series No. 11.

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Industrial Arts Education from AIM, 1967-1971, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1972, Bibliography Series No. 13.

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Magisos, Joel H. Curriculum, Demonstration, and Installation Studies: Information Sources, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1974.

Magisos, Joel H. Educational Personnel for the Disadvantaged, Handicapped, and Minorities: Information Sources, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1974.

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Taylor, Celianna I., and Magisos, Joel H. Guide to State Vocational-Technical Information Dissemination Systems, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1971.

Thesaurus of ERIC Descriptors, (New York, NY: MacMillan Information).

Trade and Industrial Education from AIM, 1967-1971, (Columbus, OH: The Center for Vocational and Technical Education, The Ohio State University), 1972, Bibliography Series No. 14.

# APPENDIXES

## Appendix A
## AIM/ARM PROJECT PRODUCTS

### Bimonthly Abstract Journals

Abstracts of Instructional and Research Materials in Vocational and Technical Education. Columbus: The Center for Vocational Education, The Ohio State University, Volume 8, 1975.

| | |
|---|---|
| Number 1*, pages 1 - 220 | (ED 102 433) |
| Number 2, pages 221 - 417 | (ED 105 300) |
| Number 3, pages 418 - 664 | (ED 108 004) |
| Number 4, pages 665 - 835 | (ED 112 267) |
| Number 5, pages 836 - 1069 | (ED 113 611) |
| Number 6, pages 1070 - 1295 | (ED 116 051) |
| Annual Index, 1975, 407 pp. | (ED 117 578) |

Abstracts of Instructional and Research Materials in Vocational and Technical Education. Columbus: The Center for Vocational Education, The Ohio State University, Volume 9, 1976.

| | |
|---|---|
| Number 1, pages 1 - 256 | (ED 119 025) |
| Number 2, pages 257 - 514 | (ED 122 158) |
| Number 3, pages 515 - 783 | (ED 129 981) |
| Number 4, pages 784 - 1033 | (ED 130 075) |
| Number 5, pages 1034 - 1302 | (ED 133 496) |
| Number 6, pages 1303 - 1525 | (ED 140 019) |
| Annual Index, 1976, 144 pp. | (ED 140 018) |

Resources in Vocational Education. Columbus: The Center for Vocational Education, The Ohio State University, Volume 10, 1977

| | |
|---|---|
| Number 1, 82 pp. | (ED 149 015) |
| Number 2, 87 pp. | (ED 149 026) |
| Number 3, 78 pp. | (ED 149 017) |
| Number 4, 87 pp. | (ED |
| Number 5, 77 pp. | (ED 147 539) |
| Number 6, 82 pp. | (ED 147 612) |
| Annual Index, 1977, 144 pp. | (ED 149 166) |

Resources in Vocational Education. Columbus: The National Center for Research in Vocational Education, The Ohio State University, Volume 11, 1978.

| | |
|---|---|
| Number 1, 94 pp. | (ED 150 450) |

*Prepared prior to contract period

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Thomas, Willie H., Compiler. Agricultural Education Instructional Materials. Columbus: The Center for Vocational Education, The Ohio State University, 1976, 257 pp. (ED 130 141)

Mason, Emmett E., Compiler. Business and Office Education Instructional Materials. Columbus: The Center for Vocational Education, The Ohio State University, 1976, 296 pp. (ED 133 553)

Blue, James, Compiler. Distributive Education Instructional Materials. Columbus: The Center for Vocational Education, The Ohio State University, 1976, 263 pp. (ED 128 618)

Eshelby, Don, Compiler. Health Occupations Education Instructional Materials. Columbus: The Center for Vocational Education, The Ohio State University, 1976, 129 pp. (ED 128 617)

Keyes, Erma D., Compiler. Home Economics Education Instructional Materials. Columbus: The Center for Vocational Education, The Ohio State University, 1976, 519 pp. (ED 128 619)

Mason, Emmett E., Compiler. Industrial Arts Education Instructional Materials. Columbus: The Center for Vocational Education, The Ohio State University, 1976, 229 pp. (ED 128 621)

Kapes, Jerome T., Compiler. Trade and Industrial Education Instructional Materials. Columbus: The Center for Vocational Education, The Ohio State University, 1976, 435 pp. (ED 128 620)

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Stakelon, Ann E. and Magisos, Joel H., Compilers. Experience Based Career Education. (Bibliography Series No. 27) Columbus: The Center for Vocational Education, The Ohio State University, October 1975, 41 pp. (ED 118 925)

Stakelon, Ann E. and Magisos, Joel H., Compilers. Evaluation of Work Experience, Cooperative Education, and Youth Manpower Programs (Bibliography Series No. 28) Columbus: The Center for Vocational Education, The Ohio State University, October 1975, 65 pp. (ED 117 184)

Stakelon, Ann E. and Magisos, Joel H., Compilers. Sex Stereotyping and Occupational Aspirations (Bibliography Series No. 29) Columbus: The Center for Vocational Education, The Ohio State University, October 1975, 43 pp. (ED 118 926)

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Magisos, Joel H. and Stakelon, Ann E., Compilers. Special Needs Populations (Bibliography Series No. 33) Columbus: The Center for Vocational Education, The Ohio State University, October 1975, 139 pp. (ED 133 607)

Budke, Wesley E. and Jezierski, Kathleen A., Compilers. Equal Access and Opportunity in Vocational Education (Bibliography Series No. 36) Columbus: The Center for Vocational Education, The Ohio State University, November 1976, 25 pp.

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Moore, Allen B. and Jezierski, Kathleen A., Compilers. Evaluation of Vocational Education Programs (Bibliography Series No. 44) Columbus: The Center for Vocational Education, The Ohio State University, March 1977, 26 pp.

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Moore, Allen B. Energy Problems Provide Job Opportunities. January 1978, 12 pp., (ED 142 794)

Kowle, Carol P. Issues and Policy in Vocational Education, 1977, 13 pp. (Published by the ERIC Clearinghouse on Career Education as Information Series No. 121. (ED 149 190)

Kowle, Carol P. Vocational Education and CETA, February 1978, 11 pp.

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